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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,935	10/21/2003	Akio Omiya	Q78032	3177

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EXAMINER	
TRAN, NHAN T	

ART UNIT	PAPER NUMBER
2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/688,935	OMIYA ET AL.	
	Examiner	Art Unit	
	NHAN T. TRAN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-18,24-28,32-34 and 37-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-18,24-28,32-34 and 37-53* is/are rejected.

7)☒ Claim(s) *54 and 55* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/14/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/14/2008 have been fully considered but they are not persuasive.

2. The Applicant asserts that Nomura does not disclose:

(i) “a cylinder has a revolving affecting section being in contact with the second lens group holding frame by a rotatable movement of the cylinder at the time of the collapse to affect revolving of the second lens group holding frame" and “the second lens group holding frame has an affect receiving section that is pushed by the revolving affecting section at the time of the collapse so that the second lens group revolves into the saving position.” (Claims 18, 28, 34 & 38).

(ii) “a driving source that rotatably moves the rear elements holding frame so that the rear elements lens revolves.” (Claims 32, 37, 42 & 48).

In response, the Examiner understands the Applicant’s arguments but respectfully disagrees for the following reasons:

(i) it is clearly seen in Fig. 4 of Nomura that the lens barrel has a cylinder (20) that has a revolving affecting section (20c in Fig. 5A) being in contact with the second lens group holding frame (21 including 21a-21d) by a rotatable movement of the cylinder at the time of the collapse to affect revolving of the second group holding frame (see Figs. 4-6B; paragraph [0065], wherein "the second lens group support frame 20 **fully rotates** counter-clockwise to a position as viewed in Figs. 5A and 6A."). Nomura

also discloses that the second lens group holding frame (21 including 21a-21d) has an affect receiving section (21c) that is pushed by the revolving affecting section (20c) at the time of the collapse so that the second lens group revolves into the saving position (see Figs. 4-6B and paragraph [0065]).

(ii) Nomura discloses, in Figs. 4-6B and paragraph [0065], that the cylinder (20) fully rotates counter-clockwise so as to move the rear elements holding frame (21 including 21a-21d) so that the rear element lens (L2) revolves.

In view of the above, the Examiner believes that the interpretation of the present claimed invention reads on the disclosure of Nomura, and therefore the rejection is maintained.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 2/14/2008 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

4. Claim 25 is objected to because of the recitation of "the taper" in the last line of this claim. This should be corrected to read as -- a taper --. Appropriate correction is required.

5. Claim 39 is objected to because of the recitation of “group)” which should be corrected to read as -- group --.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 18, 24-27, 32, 34, 37-40, 42, 44-46, 24-27 and 50-53 are rejected under 35 U.S.C. 102(a) as being anticipated by Nomura et al. (US 2003/0156832).

Regarding claim 18, Nomura discloses a digital camera that creates an image signal through catching a subject light (see Figs. 1 & 2 and paragraph [0002]), the digital camera comprising:

an image taking lens (Figs. 1 & 2), which is variable in a focal length, comprising three groups of a first lens group (L1), a second lens group (L2), and a third lens group (L3) in the named order with respect to an optical axis direction (Z1) (see paragraph [0051]);

a lens barrel (10) that incorporates therein the image taking lens, having in front an aperture through which the image taking lens appears and having in rear an internal space defined by a wall (11), the lens barrel being free in extension and collapse and performing a focal length control (Figs. 1 & 2 and paragraphs [0051]-[0054]);

a solid state imaging device (image sensor C) that receives the subject light formed by the image taking lens to create the image signal, the solid state imaging

device being supported by the wall, wherein the lens barrel has a second lens group guide frame (19/20 in Figs. 1 & 4) that moves in the optical axis direction in accordance with the extension and the collapse so as to determine a position related to the optical axis direction of the second lens group, and a second lens group holding frame (21 including 21a-21d) that holds the second lens group and is pivotally supported by the second lens group guide frame, the second lens group holding frame causing the second lens group to revolve on the optical axis of the image taking lens at the time of the extension (Figs. 1, 3A & 6A), and the second lens group holding frame causing the second lens group to revolve on a saving position out of the optical axis of the image taking lens at the time of the collapse (Figs. 2, 3B, 6B; see paragraphs [0064]-[0068]);

wherein the second lens group holding frame (21 including 21a-21d) is enabled in a direction that the second lens group is revolved on the optical axis (Figs. 4-6B), the lens barrel has a cylinder (20) that rotatably moves in accordance with the extension and the collapse, and the cylinder has a revolving affecting section (20c) being in contact with the second lens group holding frame (21) by a rotatable movement of the cylinder (20) at the time of the collapse to affect revolving of the second lens group holding frame, and the second lens group holding frame (21) has an affect receiving section (21c) that is pushed by the revolving affecting section (20c) at the time of the collapse so that the second lens group revolves into the saving position (Figs. 4-6B and paragraph [0065]).

Regarding claim 24, as shown in Figs. 6A-10 in Nomura, the second lens group holding frame (21) causes the second lens group to advance onto the optical axis of the image taking lens, at the time of the extension, in such a manner that the second lens group holding frame is released from urging of the revolving affecting section.

Regarding claim 25, Nomura also discloses that the revolving affecting section (20c) has a projection (pivot projection) provided at the rear end of the cylinder (20) with respect to the optical axis direction, and the affect receiving section causes the second lens group (L2) to be saved from the optical axis of the image taking lens to the saving position through revolving by means of pushing by the taper of the revolving affecting section, at the time of the collapse (see Figs. 4-10 and paragraphs [0065]-[0068]).

Regarding claim 28, this claim is also met by the analysis of claim 18, *wherein a front elements lens, a rear elements lens and a focus lens correspond to the first, second and third lens group in claim 18, respectively*. Furthermore, Nomura discloses the lens barrel has a lens advancing and saving mechanism (motor M and supports as shown in Fig. 1) in which at the time of the collapse of the lens barrel, the rear elements lens (L2) is saved to a hollow portion (upper space shown in Figs. 1 & 2) divided by the solid state imaging device (image sensor C) and the wall (11) beside the solid state imaging device, the hollow portion being formed by the fact that the solid state imaging device is disposed at the position projecting from the wall, and at the time of the

extension of the lens barrel, the rear elements lens is advanced onto an optical axis of the image taking lens (see Figs. 1-10 and paragraphs [0065]-[0068]).

Regarding claim 32, this claim is also met by the analysis of claim 28. Additionally, it is also clearly seen in Nomura that the digital camera further comprises a driving source (motor M and spring 23) that rotatably moves (via cylinder 20) the rear elements holding frame (21) so that the rear elements lens revolves (Figs. 1-10 and paragraphs [0057] and [0065]-[0068]).

Regarding claim 34, this claim is also met by the analyses of claim 18, *wherein a front elements lens, a rear elements lens and a focus lens correspond to the first, second and third lens group in claim 18, respectively.*

Regarding claim 37, this claim is also met by the analysis of claim 32.

Regarding claim 38, this claim is also met by the analyses of claim 18.

Regarding claims 39 & 40, these claims are also met by the analyses of claims 24 & 25, respectively.

Regarding claim 42, this claim is also met by the analyses of claim 32. It is clear that the driving source produces a rotary driving force (the motor M and/or spring 23 produces a driving force that causes the cylinder 20 to rotate).

Regarding claim 44, this claim is also met by the analyses of claim 18.

Regarding claims 45 & 46, these claims are also met by the analyses of claims 24 & 25, respectively.

Regarding claim 48, this claim is also met by the analyses of claims 32 and 42.

Regarding claim 26, see claim 32.

Regarding claim 27, Nomura also discloses that the driving force is a motor (M), and the second group holding frame has a gear for transmitting a driving from the motor (see [0057]).

Regarding claims 50 & 51, Nomura further discloses that the cylinder (20) comprises a cam groove (Fig. 4) for guiding the second lens group guide frame, wherein the cam groove is formed on an inner wall of the cylinder.

Regarding claim 52, as shown in Fig. 4-6B that the cam groove is engaged with a cam pin fixed on the second lens group guide frame.

Regarding claim 53, Nomura also discloses the revolving affecting section (20c) comprises a convex portion on a rear edge of the cylinder (Fig. 4 and 5A and paragraph [0065]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 13-17, 33, 41, 43, 47 & 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al. (US 2003/0156832).

Regarding claim 33, Nomura also suggests that not only the second lens group/the rear elements lens (L2) is collapsed into the hollow position or extended from the hollow position but also a light quantity control member (the diaphragm shutter S) can be collapsed into or extended from the hollow position in the same manner as the second lens group (see paragraph [0076]). Although Nomura does not disclose that the diaphragm shutter is moved in one united body together with the second lens group/the rear elements lens, it would be quickly recognized by one skilled in the art from the

suggestion of Nomura to provide a united body for moving both the lens and the shutter diaphragm together into the hollow position as well as extending from the hollow position so as to reduce driving mechanism components in comparison with separate driving mechanism for each unit, thereby reducing cost and size of the camera.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the camera of Nomura in view of his suggestion to move the light quantity control member (diaphragm shutter S) in one united body together with the second lens group/the rear elements lens (L2) into the hollow position and also extending them from the hollow position to the optical axis of the image taking lens. Such construction would reduce driving mechanism components in comparison with separate driving mechanism for each unit, thereby reducing cost and size of the camera.

Regarding claims 41, 43, 47 & 49, these claims are also met by the analysis of claim 33.

Regarding claim 14, Nomura further discloses that the light quantity control member is an aperture member (by virtue of diaphragm of shutter S) that controls an aperture caliber to control the subject light passing through the image taking lens (see paragraph [0076]).

Regarding claim 16, it also clear in Nomura that the light quantity control member is a shutter member that controls a shutter speed to control the subject light passing through the image taking lens (see paragraph [0076]).

Regarding claim 13, although Nomura teaches the light quantity control member (the diaphragm shutter S) as discussed in claim 33, Nomura is just silent about the light quantity control member consists of an electro-optical element. However, an Official Notice is taken that it is well known in the art to use an electro-optical element, i.e., a liquid crystal shutter, as the shutter since the electro-optical shutter provides an advantage that no mechanical motion will be needed to implement the shutter operation.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the shutter in Nomura to implement an electro-optical shutter, i.e., a liquid crystal shutter, so as to eliminate mechanical driving for the shutter, thereby providing a reliable and compact shutter unit for the camera.

Regarding claims 15 & 17, these claims are also met by the analyses of claims 13, 14 & 16.

Allowable Subject Matter

8. Claims 53 and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NHAN T. TRAN whose telephone number is (571)272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nhan T. Tran/
Primary Examiner, Art Unit 2622